Load Diagrams
Program 0180 Cellular Buffers
1. Calculation of energy per buffer: \( W = \frac{1}{2} m \times v^2 \)
2. Readout compression length from the diagram
3. Readout final load of the buffer from the table
4. Result and verification
   - \( S < 0.8 \times h \)
   - \( F < F_{\text{max}} \) of the crane structure
   - \( a = \sqrt{2s} < a_{\text{min}} \)

\( W \) = Energy Absorption [J]
\( s \) = Travel [mm]
\( F \) = Force [kN]
\( v \) = Velocity [m/s]
\( m \) = Mass [kg]
\( h \) = Buffer height
\( a \) = deceleration
80 x 40 Energy Absorption

80 x 40 Final Load
100 x 150 Energy Absorption

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\begin{figure}
\centering
\includegraphics[width=\textwidth]{energy_absorption.png}
\caption{Energy Absorption for different velocities.}
\end{figure}
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100 x 150 Final Load

```
\begin{figure}
\centering
\includegraphics[width=\textwidth]{final_load.png}
\caption{Final Load for different velocities.}
\end{figure}
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125 x 125 Energy Absorption

125 x 125 Final Load
160 x 80 Energy Absorption

160 x 80 Final Load
200 x 200 Energy Absorption

200 x 200 Final Load
200 x 300 Energy Absorption

![Graph showing energy absorption vs. work and travel for different speeds.]

200 x 300 Final Load

![Graph showing final load vs. travel and force for different speeds.]

v = 1 m/s
v = 2 m/s
v = 3 m/s
v = 4 m/s
250 x 125 Energy Absorption

250 x 125 Final Load
250 x 250 Energy Absorption

250 x 250 Final Load
315 x 158 Energy Absorption

315 x 158 Final Load
315 x 315 Energy Absorption

315 x 315 Final Load
400 x 200 Energy Absorption

400 x 200 Final Load
400 x 400 Energy Absorption

400 x 400 Final Load
400 x 600 Energy Absorption

400 x 600 Final Load
500 x 750 Energy Absorption

500 x 750 Final Load
600 x 600 Energy Absorption

600 x 600 Final Load
Conductix-Wampfler has just one critical mission: To provide you with energy and data transmission systems that will keep your operations up and running 24/7/365.

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